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ABSTRACT

For the past seven years, Missouri has been administering the Missouri Mastery and Achievement Tests (MMAT) to fulfill the requirements of the Excellence in Education Act of 1985. The MMAT, as a criterion-referenced test, can measure student progress on specific key skills over time. This summary presents results of the spring 1993 administration of the MMAT for grades 3, 6, 8, and 10. Data for grades 3 and 6 are based on the total population (about 50,000 for each grade), and data for grades 8 and 10 are based on about 10% of test takers. Trend data from 1991 and 1992 are also presented. Scaled scores from 1993 show a general upward trend in student performance. Scores decreased from 1991 to 1993 only for grade-6 social studies, grade-10 English/language arts, and grade-10 social studies. Key skills mastered by the typical (median) student have also increased slightly or remained stable since 1991. The MMAT continues to provide the framework for fulfilling the goals of excellence in education. Three figures and one table present study data. (SLD)

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1993 Results of the Missouri Mastery and Achievement Tests (MMAT)

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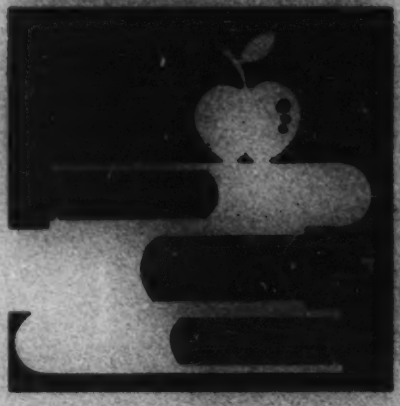

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1993
SUMMARY REPORT
OF

Missouri Mastery and Achievement Tests
(MMAT) Results

1993
Assessment Section
Department of Elementary and Secondary Education

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Executive Summary of 1993 Results of the Missouri Mastery and Achievement Tests

For the past seven years, Missouri has been administering the Missouri Mastery and Achievement Tests (MMAT) to fulfill part of the requirements of Section 4 of the Excellence in Education Act of 1985. One of the most important aspects of the MMAT is its capacity, as a criterion-referenced test, to measure student progress on specific key skills over a period of time.

From 1987 to 1992, trend data were based on the performance of a representative sample consisting of about 10 percent of the students in each grade level. The *1993 Summary Report* presents results of the Spring 1993 administration of the MMAT for grades 3, 6, 8 and 10. Data for grades 3 and 6 are based on the total population taking the test (about 50,000 at each grade level). Data for grades 8 and 10 are based on the performance of a representative sample of about 10 percent of the students at each of those grade levels. Students in the State Sample at grades 8 and 10 took an alternate, equivalent form of the MMAT.

The *1993 Summary Report* also contains trend data for grades 3, 6, 8 and 10. In 1991, students in grades 7-10 took a revised version of the MMAT for the first time. Students in grades 2-6 took the revised MMAT for the first time in 1992. The extent of the revisions varied considerably depending upon the grade level and subject area. In some grade levels/subject areas, the key skills which the MMAT measures changed substantially, while in others, they remained virtually the same. The original test and the revised version were equated at the subject level; therefore, it is possible to make year to year comparisons of scaled scores and score distributions (quintiles), regardless of the test forms. This report contains scaled score and score distribution data for grades 3, 6, 8 and 10 for the past three years. It may be problematic, however, to make comparisons between the original MMAT and the revised version at the key skill mastery level in grade levels/subject areas in which the key skills have changed substantially. Thus, this report contains median student mastery data and key skill mastery data **only** for administrations of the revised MMAT (1992-1993 for grades 3 and 6; 1991-1993 for grades 8 and 10).

Scaled scores from the Spring 1993 administration of the MMAT for students in grades 3, 6, 8 and 10 show a general upward trend in student performance (see page 17 for complete data). Since 1991, scaled scores in the vast majority of grade levels/subject areas have increased. In fact, scores in one-third of the reported grade levels/subject areas increased by more than 11 points (an 11 point increase or decrease in scaled score points is educationally significant). Increases in mathematics and science scores in grades 3, 6 and 8 were particularly notable. From 1991 to 1993, scores in the science area increased 23 points in grade 3; 8 points in grade 6; and 16 points in grade 8. During the same time period, scores in the mathematics area increased 15 points in grade 3; 18 points in grade 6; and 12 points in grade 8. In three grade levels/subject areas—grade 3 math, grade 3 science and grade 6 math—scaled scores have reached their highest point since the inception of the MMAT in 1987. Scores decreased from 1991 to 1993 in only three grade levels/subject areas—grade 6 social studies, grade 10 English/language arts, and grade 10 social studies—and all decreased by two points or fewer.

Score distribution data from 1991 to 1993, in general, also indicate that student performance on the MMAT is improving and that instruction is impacting students at all levels of achievement (see page 18 for complete data). In the base year of testing (1987 for grades 3, 6, 8 and 10) the distribution of scaled scores was divided so that 20 percent of the scores fell into each quintile. The greatest improvements in 1993 occurred in grade 3 science and grade 6 math, where 74 percent and 71 percent of the students, respectively, fell within the top two quintiles. In other grade levels/subject areas (with the exception of grade 10 social studies), percents of students in the top two quintiles ranged from 46 to 67, representing moderate to substantial improvements over the original 40 percent in the top two quintiles. Student performance in grade 10 social studies has remained very similar to performance in the base year of testing, with 40 percent of the students falling within the top two quintiles.

The number of key skills mastered by the typical (median) student has also either increased slightly or remained stable since the first administration of the revised MMAT (1991 for grades 8 and 10 and 1992 for grades 3 and 6). Across subject areas, the median student in 1993 mastered one more key skill in grade 3 and two more key skills in grade 6 than the median student in 1992. Overall median student mastery in grades 8 and 10 remained stable from 1991 to 1993 (see page 6).

Spring 1993 MMAT results indicate, with few exceptions, that student performance is either improving or is remaining stable across grade levels and subject areas. The MMAT continues to provide a framework for fulfilling one of the major goals of the Excellence in Education Act—encouraging academic excellence for all of Missouri's public school students.

History and Description of the
Missouri State Testing Program

The Missouri Mastery and Achievement Tests (MMAT) comprise a battery of criterion-referenced tests specifically developed to satisfy the testing provision in the Excellence in Education Act of 1985. This law requires the Department of Elementary and Secondary Education to identify "key skills" or learner outcomes in the academic subjects of reading/language arts/English, mathematics, science, and social studies/civics; to test annually a representative sample of students throughout the State using a criterion-referenced test which measures the identified key skills; and to report the results of this testing to the General Assembly. Local school districts are required to measure student achievement on the key skills using criterion-referenced tests and to identify areas in need of instructional improvement. Criterion-referenced tests are especially well-suited to this purpose because they provide information about the educational strengths and needs of individual students and district curricula relative to a specific set of objectives.

The Department identified the key skills mandated by the Excellence in Education Act with the assistance of Missouri public school teachers, subject area specialists, school administrators and college professors. The resulting publication, *Core Competencies and Key Skills for Missouri Schools*, first published in September of 1986, listed identified key skills in terms of learner outcomes and provided information for incorporating them into local curricula.

In 1989, committees of educators met to begin review and revision of the original key skills. All principals in the State received letters requesting teachers' input regarding needed changes in key skills. Committees in each subject area used information provided by districts to guide the revision of the key skills. A revised version of the *Core Competencies and Key Skills for Missouri Schools* for grades 7 through 10 was published in 1990. The corresponding publication for grades 2 through 6 was published in 1991. These publications present the key skills for each subject area; content analyses which outline the committee's purpose for including each skill; the test content specifications which served as item-writing guidelines for MMAT-tested objectives; and sample test items or assessment procedures which educators can use to measure student progress toward attainment of each key skill. Although Missouri educators have identified both tested and non-tested key skills as important learner outcomes, districts should not consider them a total curriculum. The core competencies and key skills most effectively provide a framework around which a district can build a complete curriculum.

Upon completion of the key skill revisions, the Department and the Center for Educational Assessment at the University of Missouri-Columbia began work to revise the MMAT. The MMAT was designed in accordance with the American Psychological Association's Standards for Educational and Psychological Testing. Teachers from around the State were involved in writing items for the test. Content area specialists and other consultants then reviewed all items for congruence to key skills and potential bias. Finally, all items were field tested to determine statistical adequacy. Students in grades 7-10 took the revised MMAT for the first time in 1991. Revised tests for grades 2-6 were administered for the first time in 1992.

The revised MMAT, like the original test, includes four multiple-choice items to measure each key skill. To demonstrate mastery of a key skill, a student must correctly answer at least three of the four items. The MMAT for grades 3 through 10 includes four subtests. Each subtest contains between 56 and 104 items for a total of about 300 questions per grade level. The grade 2 test covers only the areas of reading/language arts and mathematics. The tests are designed to be administered over a four-day period, with approximately one to two hours a day devoted to testing.

The MMAT provides districts with data presented in a number of educationally relevant formats. **Key skill mastery data** provide specific, instructionally relevant information that can help teachers guide instruction for individual students or enable districts to evaluate the effectiveness of the curriculum and identify needed changes. **Scaled scores** allow districts to determine how their students compare with other students in the State and to monitor educational progress made over time. **Score distribution data** help educators determine whether instructional efforts are reaching all of the various populations of students taking the test.

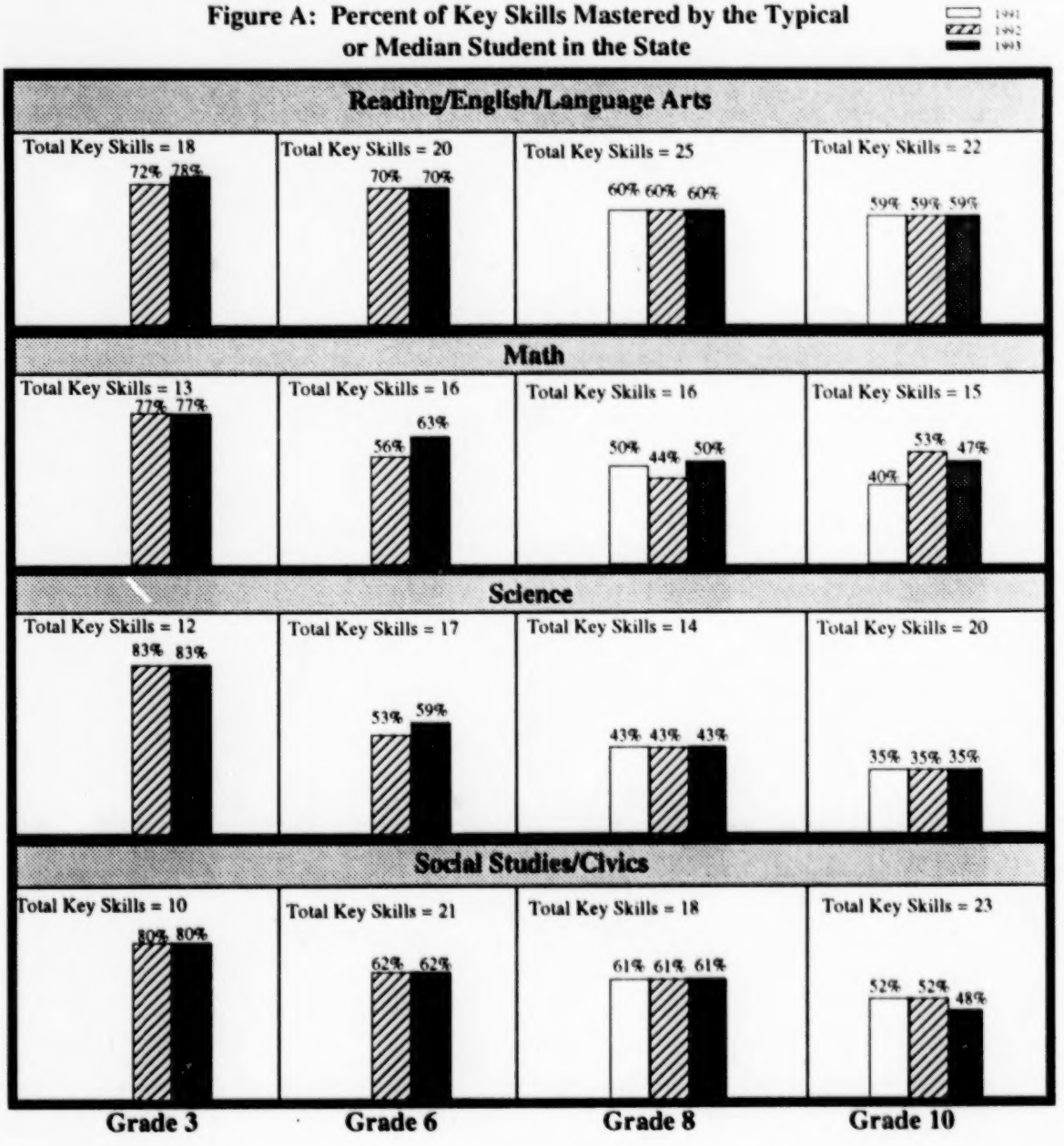
From 1987 to 1992, the Center for Educational Assessment randomly selected and tested a representative State Sample including approximately 10 percent of the students in each grade. The information from this State Sample formed the basis for the annual report to the General Assembly. For the Spring 1993 administration of the test, the Department will report State level data for grades 3, 6, 8 and 10. State data for grades 3 and 6 will reflect the performance of all students taking the MMAT at those grade levels (about 50,000 per grade level). Data for grades 8 and 10 will be based on a the performance of a representative sample which includes about 10 percent of the students at each of those grade levels. Students in the State Sample at grades 8 and 10 took an alternate, equivalent form of the MMAT. This report, the *1993 Summary Report*, contains data representing the Spring 1993 performance of students in grades 3, 6, 8 and 10 as well as longitudinal trend data for these grades.

This report presents trend data for 1991-1993 for scaled scores and score distributions for grades 3, 6, 8 and 10. Spring 1991 scores for grades 3 and 6 reflect performance on the original MMAT; however, the original and revised tests were equated at the subject level. Therefore, scaled scores and score distribution data are comparable across years, regardless of test forms. Because the key skills changed substantially in some grade levels and subject areas, it is somewhat more problematic to compare scores at the key skill level across test forms. Thus, this report contains key skill mastery data and median student mastery data only for the years in which the revised MMAT was administered (1992-1993 for grades 3 and 6; 1991-1993 for grades 8 and 10).

Median Student Mastery

The following graph presents median student mastery in each subject area for grades 3, 6, 8 and 10. Trend data are presented for each year of administration of the revised MMAT (1992-1993 for grades 3 and 6; 1991-1993 for grades 8 and 10). The number at the top of each cell represents the total number of key skills tested in each grade level and subject area. Each bar of the graph represents the percent of key skills mastered by the median (typical) student in the State for a particular grade level and subject in a given year. As the graph indicates, median student performance has, in general, improved or remained stable since the first administration of the revised test.

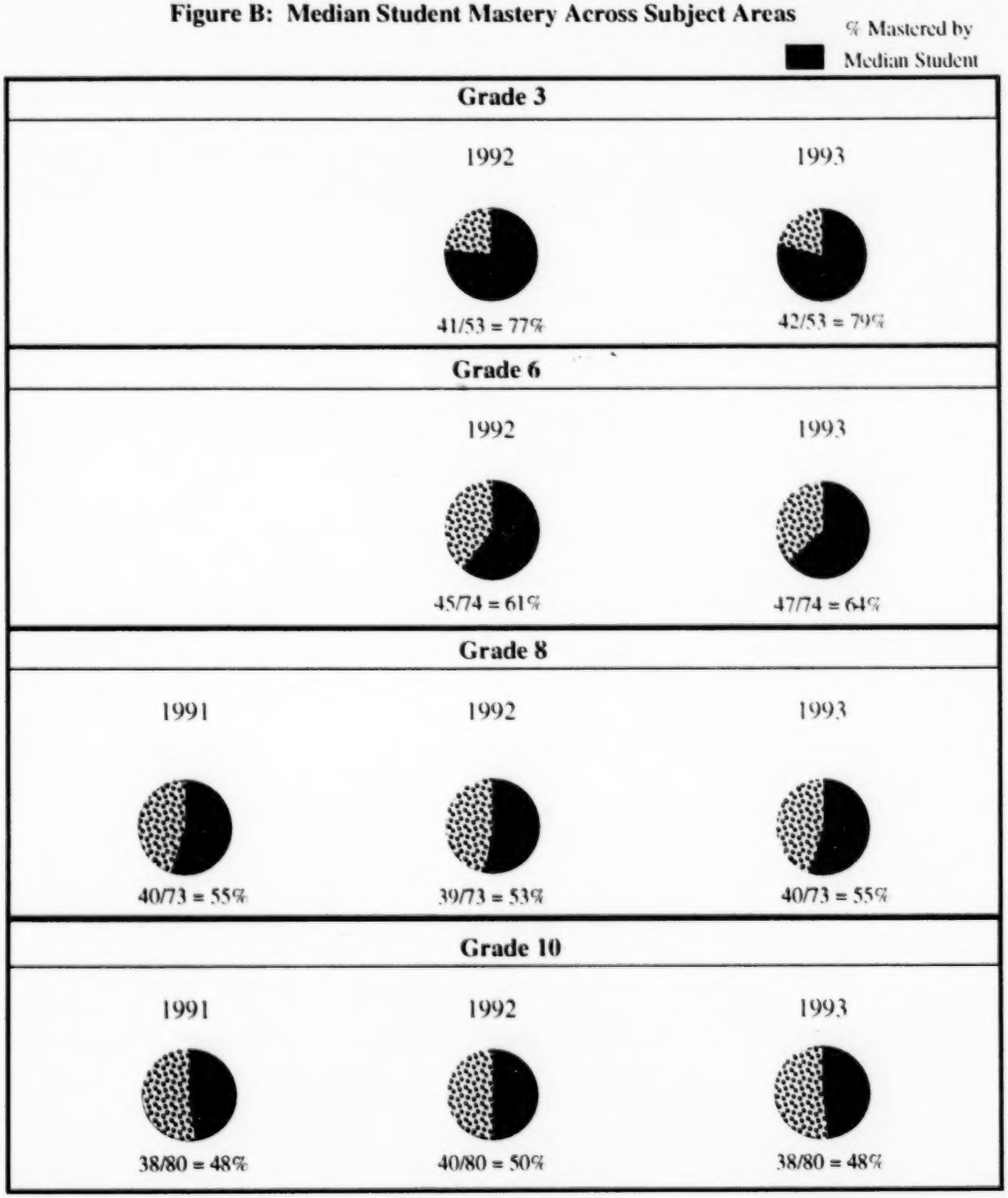
Figure A: Percent of Key Skills Mastered by the Typical or Median Student in the State



Median Student Mastery Data Summary

The following graph presents a summary of median student mastery for grades 3, 6, 8 and 10. Data are presented for each year of administration of the revised MMAT (1992-1993 for grades 3 and 6; 1991-1993 for grades 8 and 10). Each graph shows the percent of the total key skills across subject areas mastered by the median (typical) student in a given grade level.

Figure B: Median Student Mastery Across Subject Areas



Percent of Students Mastering Each Key Skill

The charts on pages 9-16 show the percent of students in the State mastering each tested objective for each year of administration of the revised MMAT in grades 3, 6, 8, and 10 (1992-1993 for grades 3 and 6; 1991-1993 for grade 8 and 10). Each MMAT objective is measured by four items. Students must answer at least three of the four correctly to demonstrate mastery of the key skill. A change of 5 or more percent between the years is educationally meaningful.

Figure C: Percent of Students Mastering Key Skills
GRADE 3
READING/LANGUAGE ARTS

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
B-1	Contextual Word Meaning	59%	60%
B-2	Prefixes/Suffixes	68	69
B-3	Synonyms/Antonyms	65	64
B-4	New Word Meanings	68	68
C-1	Story Elements	83	82
C-2	Fact/Fantasy	70	70
C-3	Cause/Effect	74	74
C-4	Main Idea	58	60
C-5	Conclusions/Generalizations	78	77
C-7	Outcome Prediction	75	75
C-8	Story Title	51	51
C-10	Summarization	53	55
D-5	Directions	79	79
G-3	Effective Writing	66	66
G-6	Sentence Combining	69	70
G-9	Capitalization	68	69
G-10	Punctuation	50	52
G-11	Grammatical Usage	72	71

MATHEMATICS

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
A-2	Number Comparison	74%	76%
A-3	Place Value	61	63
A-6	Fractional Parts	73	75
B-4	Addition/Subtraction	80	79
B-5	Multiplication	71	72
B-7	Open Sentences	66	66
D-3	Time	71	72
D-5	Measurement	78	78
E-2	Shapes	77	78
F-2	Displays of Data	68	69
F-3	Grids	62	62
H-2	Money Problems	61	63
H-4	Problems	61	63

GRADE 3

SCIENCE

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
B-3	Organisms in Ecosystems	83%	83%
C-1	Seed Germination & Growth	80	80
C-2	Seedling Growth	60	61
C-3	Animal/Plant Development	87	87
E-3	Temperature Measurement	56	57
G-2	Effects of Heating/Cooling	87	87
H-2	Effects of Pushing/Pulling	84	83
H-4	Hazardous Situations	84	83
I-1	Objects in the Sky	82	81
I-2	Light Producers/Reflectors	61	60
I-4	Temperature/Precipitation	71	73
J-1	Shadow Lengths	56	56

SOCIAL STUDIES/CIVICS

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
A-4	Map-reading Skills	80%	81%
A-5	Features of Maps	71	73
B-2	Effects of Regional Changes	56	54
F-1	Past/Present Comparisons	79	78
G-2	Democratic Decision Making	74	76
H-2	Major Offices of Government	46	48
J-1	Responsible Behavior	87	86
K-1	Respect for Others	83	82
M-2	Economic Choices	55	60
V-1	Interpret Sources	77	77

GRADE 6

READING/LANGUAGE ARTS

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
B-1	Contextual Word Meaning	69%	70%
B-3	Synonyms/Antonyms	35	37
C-1	Story Elements	60	60
C-2	Fact/Opinion	81	83
C-3	Cause/Effect	85	85
C-4	Main Idea	73	76
C-5	Conclusions/Generalizations	78	79
C-7	Outcome Prediction	72	74
C-8	Author's Purpose	69	72
C-10	Summarization	54	56
C-12	Figurative Language	75	76
C-13	Point of View	51	52
D-1	Learning Resources	67	71
D-5	Directions	88	89
G-3	Effective Writing	59	65
G-7	Draft Revision	51	53
G-8	Spelling	44	45
G-9	Capitalization	51	53
G-10	Punctuation	55	56
G-11	Grammatical Usage	53	56

MATHEMATICS

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
A-2	Fraction/Decimal Comparison	41%	49%
A-4	Numerical Sequences	56	63
A-6	Graphing on Number Lines	37	42
B-6	Arithmetic	45	50
B-7	Number Sentences	77	77
B-8	Fraction Multiplication	67	69
B-9	Order of Operations	48	54
D-1	Measurement	68	74
D-6	Area/Perimeter	46	51
D-9	Measurement Conversion	35	40
E-4	Properties of Shapes	58	67
F-1	Data Collection	72	76
F-2	Displays of Data	68	71
H-1	Money Problems	69	71
H-4	Multistep Problems	53	56
H-5	Nonstandard Problems	39	41

GRADE 6
SCIENCE

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
B-1	Requirements for Life	68%	71%
B-2	Parts of Plants	34	36
B-3	Photosynthesis	40	42
C-2	Plant/Animal Growth Rates	81	84
C-3	Endangered Species	57	63
E-4	Acids/Bases	44	50
E-5	Metric Measurement	50	55
G-1	Chemical/Physical Changes	66	63
H-1	Simple/Compound Machines	51	49
H-3	Friction	52	53
H-5	Electromagnets	69	73
H-6	Electricity	77	79
H-7	Electric Circuits	48	51
H-11	Potential/Kinetic Energy	39	46
I-1	Minerals	69	72
K-2	Soil Erosion	23	24
K-3	Fossils	37	41

SOCIAL STUDIES/CIVICS

Key Skill		Percent of Students Demonstrating Mastery	
		1992	1993
A-4	Map-reading Skills	57%	59%
A-5	Features of Maps	58	60
A-6	Maps: United States	61	64
A-7	Maps: World	52	56
B-2	Effects of Regional Changes	53	55
E-1	Time Line Interpretations	54	56
E-3	Fact/Value Judgment	56	60
F-4	Cause/Effect Relationships	55	56
G-1	Democratic Practices/Values	49	52
G-2	Democratic Decision Making	77	78
H-1	Government Activities	49	52
I-2	Rights/Responsibilities	64	65
M-2	Economic Choices	52	56
N-1	Production Terms	42	45
P-2	Supply/Demand Predictions	79	81
Q-2	Government & Economy	47	51
R-6	Regional Specialization	56	55
S-4	Social/Cultural Roles	59	61
T-1	Meeting Human Needs	65	67
V-1	Interpret Sources	45	48
V-2	Library Resources	67	69

GRADE 8

ENGLISH/LANGUAGE ARTS

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
B-1	Contextual Word Meaning	68%	67%	70%
C-1	Story Elements	58	57	56
C-2	Fact/Opinion	68	69	70
C-3	Cause/Effect	69	71	68
C-4	Main Idea	49	41	47
C-5	Inferences/Conclusions	60	47	59
C-7	Propaganda Techniques	42	49	49
C-8	Author's Purpose	54	51	50
C-9	Plot/Setting Relationship	55	61	55
C-10	Summarization	55	65	56
C-12	Figurative Language	60	65	63
D-1	Reference Sources	50	66	56
D-5	Directions	78	73	77
D-6	Compare Sources	76	70	76
E-1	Schedules/Timetables	72	73	71
E-2	Instructions/Labeling	63	65	63
G-2	Main Idea/Details	33	27	36
G-3	Story Details	66	61	65
G-4	Organizational Elements	45	40	44
G-5	Persuasive Rhetoric	56	56	53
G-6	Sentence Combining	46	46	47
G-8	Spelling	56	49	58
G-9	Capitalization	51	53	53
G-10	Punctuation	44	48	44
G-11	Grammatical Usage	56	64	55

MATHEMATICS

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
A-1	Interpreting Numbers	51%	61%	59%
A-2	Number Comparison	42	47	46
A-7	Number Theory	34	40	43
B-7	Solving Linear Equations	43	51	50
B-9	Algebraic Expressions	61	63	66
C-5	Estimation Problems	55	49	59
D-6	Perimeter/Area	42	40	45
D-10	Circle Circumference/Area	38	30	41
E-1	Lines/Angles	63	56	65
E-2	Polygon Classification	32	27	34
E-3	Similar/Congruent Figures	54	50	55
F-4	Probability	55	47	57
G-4	Sequential Instructions	65	60	67
H-1	Consumer Money Problems	41	33	43
H-3	Area/Perimeter Problems	49	50	51
H-4	Proportion Problems	56	54	55

GRADE 8

SCIENCE

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
A-2	Vertebrate Classification	63%	68%	63%
B-1	Cell Parts	36	42	43
D-1	Human Body Systems	60	60	62
D-4	Pollution Effects	60	60	62
D-5	Variables in an Experiment	19	36	24
E-1	Kinetic/Potential Energy	34	46	39
E-5	Heat Transfer	35	55	43
E-6	Atoms/Elements/Compounds	40	46	45
F-1	Wave Characteristics	20	25	29
H-1	Energy in Systems	48	38	53
H-5	Periodic Table	68	72	72
I-3	Missouri Fossils	24	33	31
L-2	Weather Prediction	44	43	49
L-6	Climatic Zones	40	45	44

SOCIAL STUDIES/CIVICS

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
A-4	Map-reading Skills	73%	76%	72%
A-6	Maps: United States	67	69	69
A-7	Maps: World	70	70	69
B-2	Effects of Regional Changes	47	49	48
E-5	Historical Resources/Biases	46	51	48
F-4	Early American History	43	43	45
F-5	U.S. History to Civil War	35	40	34
G-1	Democratic Practices/Values	60	51	62
G-2	Democratic Decision Making	63	66	64
H-2	Government Offices	46	45	44
H-4	Legislative Procedures	45	51	44
I-2	Rights/Responsibilities	55	63	55
J-3	Citizen Influence	63	68	64
K-2	Political Issue Analysis	45	57	44
M-3	Economic Decision Making	65	65	65
N-1	Results of Production Change	50	56	48
P-4	Changes in Supply/Demand	60	67	60
V-3	Research Methods	71	68	71

GRADE 10
ENGLISH/LANGUAGE ARTS

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
B-1	Contextual Word Meaning	67%	60%	68%
B-2	Prefixes/Suffixes	51	54	51
C-1	Story Theme	64	61	64
C-2	Examples/Illustrations	46	54	43
C-3	Cause/Effect	66	59	64
C-4	Main Idea	61	67	59
C-5	Inferences/Conclusions	49	38	46
C-7	Plot Elements	66	59	66
C-8	Author's Purpose	54	58	53
C-9	Literary Forms	58	60	56
C-10	Figurative Language	47	51	46
D-1	Reference Sources	61	68	62
D-4	Organize Information	62	64	64
D-5	Directions	74	78	73
D-6	Compare Sources	60	61	61
E-1	Business Correspondence	47	60	44
E-2	Occupational Information	68	66	68
G-2	Paragraph Construction	56	53	55
G-3	Sentence Revision	59	61	56
G-5	Spelling/Usage/Structure	50	45	48
G-7	Punctuation	49	49	49
G-9	Writing Techniques	45	38	43

MATHEMATICS

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
A-5	Simplify Expressions	61%	60%	61%
B-7	Solve Linear Equations	41	45	45
B-10	Solve Formulas	30	40	30
C-1	Estimation	36	50	40
C-5	Estimation Problems	48	47	50
D-5	Pythagorean Theorem	46	57	49
E-1	Lines/Angles	49	54	48
E-3	Linear Equation Graphs	25	34	27
E-6	Similar/Congruent Figures	40	43	40
F-2	Probability	44	61	46
F-3	Inference Limitations	34	42	35
G-1	Logical Conclusions	64	44	64
G-2	Conclusion Validity	57	67	57
H-2	Banking Problems	63	72	62
H-4	Net Pay Computation	38	49	36

GRADE 10
SCIENCE

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
A-2	Mitosis/Meiosis	31%	28%	30%
A-3	Classification: Kingdoms	30	30	31
A-4	Classification: Phyla	46	57	49
B-1	Functions of Cell Parts	26	34	29
C-4	Natural Selection	28	37	27
D-2	Marine/Terrestrial Environments	29	30	31
D-3	Overpopulation Problems	43	44	42
D-4	Elemental Cycles & Food Webs	53	41	53
D-7	Sexually Transmitted Disease	69	74	75
E-3	Scientific Notation	12	11	14
F-2	Solution/Suspension/Colloid	33	26	33
F-7	Nuclear Fission/Fusion	17	16	16
G-1	Kinetic-molecular Theory	35	40	36
G-2	Energy Transformations	46	47	46
H-1	Newton's Laws of Motion	27	48	28
I-2	Earth Region Classification	44	36	44
K-1	Time Line/Earth History	61	53	61
L-1	Experimental Variables	15	21	17
L-3	Energy Needs	45	42	43
L-4	Toxic/Nuclear Waste	66	56	64

SOCIAL STUDIES/CIVICS

Key Skill		Percent of Students Demonstrating Mastery		
		1991	1992	1993
A-4	Map-reading Skills	61%	61%	60%
A-6	Maps: United States	52	60	54
A-7	Maps: World	60	68	60
B-2	Effects of Regional Changes	50	44	48
E-5	Historical Resources/Biases	42	42	41
F-3	Historical Personages	35	49	31
F-4	History Events: America	47	47	47
F-7	History Events: Modern World	29	30	29
F-8	Contributions of Cultures	32	39	34
F-12	Historical Sequences: U.S.	53	51	50
F-13	Historical Sequences: World	32	31	30
G-5	U.S. Political Documents	35	37	36
G-6	Comparison of Governments	51	49	48
H-2	Government Offices	53	62	53
H-3	Federal/State Governments	68	68	66
J-3	Citizen Influence	62	67	62
K-2	Political Issue Analysis	49	37	47
L-1	Propaganda Analysis	52	55	52
N-5	Influences on GNP	54	61	51
O-5	Economic Institutions	63	62	61
Q-3	Market & Command Economies	47	45	43
Q-7	GNP & Living Conditions	51	52	51
S-6	Prejudice/Discrimination	73	75	70

Scaled Score Averages

The following chart provides the scaled score averages for each subject area in grades 3, 6, 8 and 10 for the 1991, 1992 and 1993 test administrations. These averages may be compared within grade level and subject area as a broad measure of academic progress over time. The first year the test was administered (1987 for grades 3, 6, 8, and 10), a baseline was established and the average for each grade level and subject area was set at 300. Although the 1991 scaled scores for grades 3 and 6 were obtained from the administration of the original MMAT, scaled scores between the original and the revised test are comparable. A change of about 11 points over time is considered educationally meaningful.

Figure D: Scaled Score Averages

Grade	Year	Reading	Math	Science	Social Studies	Average
3	1991	321	326	344	336	332
	*1992	323	339	364	336	341
	1993	325	341	367	342	344
6	1991	296	347	352	330	331
	*1992	308	349	347	322	332
	1993	313	365	360	329	342
8	*1991	318	331	339	315	326
	1992	323	335	365	324	337
	1993	318	343	355	316	333
10	*1991	313	326	327	302	317
	1992	313	338	348	307	327
	1993	311	329	329	300	317

* Indicates first year of revised MMAT administration

Score Distribution Data

The following charts show the score distributions for students in grades 3, 6, 8 and 10 who took the MMAT in 1991, 1992 and 1993. In the base year of testing (1987), 20 percent of the students in these grade levels fell into each quintile. Each cell of the blocks which follow contains the percent of students which fell within that quintile in the following years.

Figure F: Score Distribution

***Grade 3**

	Reading			Math			Science			Social Studies		
	91	92	93	91	92	93	91	92	93	91	92	93
High	31	32	34	35	42	44	44	54	56	39	40	43
	19	22	21	21	20	21	22	20	18	21	20	18
	19	18	17	16	15	14	13	10	10	16	14	13
	16	15	14	13	12	11	10	08	08	12	12	11
Low	15	13	14	15	11	11	11	08	08	12	14	14

***Grade 6**

	Reading			Math			Science			Social Studies		
	91	92	93	91	92	93	91	92	93	91	92	93
High	19	24	27	44	44	52	47	46	51	38	34	38
	18	20	20	20	19	19	18	17	16	20	19	19
	20	19	19	15	14	12	13	13	12	14	15	14
	18	19	17	11	11	08	11	10	10	14	14	13
Low	24	18	17	11	11	09	11	14	12	14	18	16

****Grade 8**

	Reading			Math			Science			Social Studies		
	91	92	93	91	92	93	91	92	93	91	92	93
High	29	31	29	36	39	42	40	52	47	29	34	30
	20	21	21	18	19	18	18	16	16	18	20	18
	20	17	18	16	13	14	14	11	13	18	15	16
	17	16	18	15	13	12	12	10	10	15	13	15
Low	14	14	14	15	16	13	15	12	15	20	18	21

****Grade 10**

	Reading			Math			Science			Social Studies		
	91	92	93	91	92	93	91	92	93	91	92	93
High	28	27	28	34	40	35	35	47	37	22	24	21
	19	19	18	20	19	21	20	18	20	19	19	19
	16	17	17	16	15	15	16	13	15	18	19	17
	18	18	18	15	12	13	13	10	12	19	18	19
Low	19	18	20	15	14	16	15	12	15	22	19	23

* Revised MMAT used in 1992

** Revised MMAt first used in 1991

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